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its existence as a product of putrefaction has been suspected; and Brieger speaks of the "*muscarin äuliche Wirkung*" of an alkaloid isolated by him, but is not satisfied of its identity, as this alkaloid is not included in the list of those discovered and recorded by him.

The case I have here reported is, moreover, doubtless the only one yet investigated wherein muscarine, heretofore known only as a vegetable alkaloid, has been found as a decomposition-product in a food the consumption of which has resulted in death, attended by the well-known symptoms of muscarine-poisoning. The facts observed and here recorded seem to present one more illustration of the intimacy existing between the composition and decomposition of animal and vegetable organisms, and furnish an additional proof of the interest and importance of this new field of investigation. Interest in the researches made in this new domain must be proportional to their importance, capable as they are of developing facts of so universal significance, and dealing with transformations occurring not only in the food we may eat, but in any animal body as well, and demanding new methods of lego-chemical investigation.

During the past year I have continued the investigation begun the previous season, and am now able to report the repeated isolation of muscarine as a product of the putrefaction of the food from the eating of which the four people at Chitose died, and, moreover, have been so fortunate as to discover two new and heretofore unknown ptomaines. One of these was obtained from the original ether extract; but, though their character has been carefully studied, I prefer to reserve opinion as to identification.

Discussion of the scientific interest and value of these facts is here out of place; but their practical value is, however, of widespread importance and applicability, both from sanitary and legal points of view. We are forced to recognize the danger of eating either animal or vegetable food after decomposition has begun, since this process may result in the development of deadly poisonous alkaloids resembling in physiological properties, strychnine, morphine, brucine, and other of the most powerful poisonous alkaloids hitherto known only as products of vegetable growth. Many diseases of a cholera-like character, perhaps even this most dreaded malady itself, may result from the consumption of food in which the process of putrefaction has begun. From a legal standpoint, chemists, physicians, and jurists are now compelled to recognize the possibility that many supposed cases of criminal poisoning are in reality the result of ptomaine-formation, either in food or in the decomposing body after death.

BOOK-REVIEWS.

Fundamental Problems. By DR. PAUL CARUS. Chicago, Open Court Publ. Co. 12°. \$1.

THE author of this work is the editor of the *Open Court*, a paper professing to teach a new religion, and most of the chapters of which the book consists have already appeared in the columns of that paper. The object of the book is to set forth the philosophy of Dr. Carus, which, we suppose, must be taken as the basis of that improved religion which the *Open Court* was founded to teach. One merit the work certainly has: it is, except in the ethical part, plainly written, and leaves no doubt as to what the author's philosophy is. It is a crude and crass materialism. Indeed, we have never seen a work in which the materialistic view was presented in so extreme a form as in this of Dr. Carus. Thus, in discussing the origin of feeling, he says, "We must expect the solution of this problem from biological investigations. . . . The conditions of feeling must exist in the inorganic matter of our world, and the appearance of the phenomena of sensation will be found to depend upon a special form in which the molecules of protoplasm combine and disintegrate" (pp. 10-11). And elsewhere he says that "it is not improbable that feeling will be demonstrated as a special kind of reflex action in organized substance" (p. 185). "The ego . . . is the result of the innumerable and complicated nerve organisms in our body" (p. 214). And then, as if these assertions were not sufficient, Dr. Carus declares "it is undeniable that immaterial realities cannot exist. The thing exists by its being material" (p.

86). He ridicules the idea of a First Cause, even when conceived as the Unknowable, and calls it a chimerical nonentity. God is variously spoken of as the All-existence and as the order of the world. The doctor's ethical theory is confused and inconsistent. He rejects utilitarianism, and at first adopts Kant's view that the moral law is purely formal, without any reference to ends; yet again he says that man is moral "by observing and conforming to the cosmical order of nature;" and both these views are supplemented by the theory that morality consists in living for the ideal, though what the ideal is we are nowhere informed. Such are Dr. Carus's views; and we are constrained to say that we do not think they will revolutionize either philosophy or religion.

Hygiene of the Nursery. By LOUIS STARR. 2d ed. Philadelphia, Blakiston. 12°. \$1.

WHEN the first edition of this manual appeared, we said, that, of the many books which have been published on this subject, this was by far the best. This, the second edition, is, by virtue of a thorough revision and numerous additions, superior to the first. It has our hearty commendation.

Statics for Beginners. By JOHN GREAVES. London and New York, Macmillan. 16°. 90 cents.

THIS work on "Statics for Beginners," by John Greaves, fellow and mathematical lecturer of Christ College, Cambridge, England, assumes no knowledge beyond "Euclid," Books 1-6, and elementary algebra, with a few propositions in trigonometry. Collections of easy examples are inserted after the more important propositions, while examples of greater difficulty are given at the ends of the chapters.

AMONG THE PUBLISHERS.

MESSRS. GINN & CO. announce as in preparation "Practical Latin Composition," by W. C. Collar, A.M., head master of the Roxbury Latin School, Boston, and author of "The Beginner's Latin Book" and "Collar's Eysenbach." This book embodies a method that has been followed by the author for many years with the most satisfactory results. A brief explanation of the method will show how rational it is, how well it accords with the principles of language-teaching now most approved, and how simple and effectual an aid it should prove to a real understanding of Latin. The book consists of three classes of exercises, all based on selections from the Latin authors usually read in schools. The first exercise of each group contains easy sentences to be turned into Latin orally, — sentences involving the use of words, idioms, and constructions of the Latin text assigned for study in preparation. The second exercise consists of a short passage of continuous English to be written out in Latin, based on the same Latin text as the preceding. The third exercise, which may be omitted at the teacher's option, contains questions in Latin, to be answered in Latin, on the subject-matter of the original, but not introducing either words or grammatical principles that are unfamiliar. Notes and occasional grammatical references accompany the exercises.

— "From Nineveh to the Lake; the Deluged Valley of the Conemaugh; Scenes Afoot," is announced by Alex. Y. Lee, architect and civil engineer, 96 4th Avenue, Pittsburgh, Penn. This is an extended bird's-eye view of the valley of the Conemaugh, Johnstown, and the lake, finely lithographed and drawn from personal sketches, and based upon surveys of the Pennsylvania Railroad.

— Roberts Brothers have just ready, in their series of Balzac's works, "Seraphita," which is the completing volume of Balzac's three philosophical novels, of which "The Magic Skin" and "Louis Lambert" have already been issued by this house. Many critics have so little understood the real meaning of "Louis Lambert" and "Seraphita," that they have wondered why the author gave them a place in the *Comédie Humaine*, which, nevertheless, without them, would be a temple without a pediment, as M. Taine very clearly saw and said. Mr. George F. Parsons takes advantage of Miss Wormeley's translation to state and prove and elucidate this truth in an introduction, and all serious readers who follow it throughout will never regret that they have thus prepared themselves to understand Balzac's work.

— Barnicott & Son, Taunton, England, have issued another edition of their useful "Country Gentleman's Reference Catalogue to the Best Works on Agriculture, Botany, Natural History, Sporting, Recreations, Domestic Management, and Kindred Subjects."

— Sir Morell Mackenzie, in the *Contemporary Review*, in writing of stimulants and the voice, says, "Tobacco, alcohol, and fiery condiments of all kinds are best avoided by those who have to speak much, or at least they should be used in strict moderation. I feel bound to warn speakers addicted to the 'herb nicotian' against cigarettes. Like tipping, the effect of cigarette-smoking is cumulative, and the slight but constant absorption of tobacco juice and smoke makes the practice far more noxious, in the long-run, than any other form of smoking. Our forefathers, who used regularly to end their evenings under the table, seem to have suffered little of the well-known effects of alcohol on the nerves; while the modern tippler, who is never intoxicated, is a being whose whole nervous system may be said to be in a state of chronic inflammation. In like manner cigarette-smokers (those, at least, who inhale the smoke, and do not merely puff it 'from the lips outward,' as Carlyle would say) are often in a state of chronic narcotic poisoning. The

old jest about the slowness of the poison may seem applicable here; but, though the process may be slow, there can be little doubt that it is sure. Even if it does not kill the body, it too often kills or greatly impairs the victim's working efficiency and usefulness in life. The local effects of cigarettes in the mouth must also be taken into account by those whose work lies in the direction of public speech. The white spots on the tongue and insides of the cheeks, known as 'smoker's patches,' are believed by some doctors with special experience to be more common in devotees of the cigarette than in other smokers. This unhealthy condition of the mouth may not only make speaking troublesome, or even painful, but it is now proved to be a predisposing cause of cancer. All fiery or pungent foods, condiments, or drinks tend to cause congestion of the throat; and, if this condition becomes chronic, it may lead to impairment, if not complete loss, of voice. The supposed miraculous virtues of the mysterious possets and draughts on which some orators pin their faith exists mainly in the imagination of those who use them: at best, they do nothing more than lubricate the joints of the vocal machine, so as to make it work more smoothly."

**Publications received at Editor's Office,
June 10-15.**

BALZAC, H. de. *Seraphita*. Tr. by Katharine Prescott Wormeley. Boston, Roberts. 275 p. \$1.50.
COCKSHOTT, A., and Walters, F. B. *A Treatise on Geometrical Conics*. London and New York, Macmillan. 205 p. 12°. \$1.25.
CRANE, T. F. *La Société française au Dix-Septième Siècle*. London and New York, Putnam. 342 p. 24°. \$1.50.
HELPS, A. *Essays written in the Intervals of Business*. London and New York, Macmillan. 130 p. 16°. 60 cents.
PAUL, H. *Principles of the History of Language*. Tr. by H. A. Strong. New York, Macmillan. 512 p. 8°. \$3.

WALLACE, A. R. *Darwinism: an Exposition of the Theory of Natural Selection with Some of its Applications*. London and New York, Macmillan. 494 p. 12°. \$1.75.

WRIGHT, G. F. *The Ice Age in North America and its Bearings upon the Antiquity of Man*. New York, Appleton. 622 p. 8°. \$5.

FOR SALE.

Three original drawings by Baron Cuvier. No. 1, in pencil, *The Anatomy of a Snail*. No. 2, in water-colors, *Kingfisher and Insects*. No. 3, in water-colors, *Insects*. The two last were drawn when Cuvier, a lad of sixteen, was at the University of Stuttgart. Price £50. Apply to T. H. H., Office of "Science," 47 Lafayette Place, New York.

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CONTENTS FOR JUNE 1889.

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HOUGHTON, MIFFLIN, & CO., Boston.

11 East Seventeenth Street, New York.

— A new magazine idea has been struck by *Scribner's*, the July issue of which will be a fiction number for midsummer reading, containing seven complete short stories, bright, entertaining, and richly illustrated by skilful artists like Frederic Remington, Robert Blum, and Chester Loomis. The number will also contain the ninth instalment of Mr. Stevenson's "Master of Ballantrae," and the second article in the electric series. This last is by Charles L. Buckingham, the electrical expert and attorney for the Western Union, and is on "The Telegraph of To-day." This will be abundantly illustrated with views from the great operating-room of the Western Union in New York, from the main office of the Commercial Cable Company, and from other interesting sources. Telegraphing from moving trains and between ships at sea will be clearly explained.

— Messrs. Ginn & Co. announce for publication "A School Iliad, with Vocabulary," edited for schools by Professor T. D. Seymour of Yale College, author of "The Language and Verse of Homer," etc., with introduction, commentary, and illustrated vocabulary. Two editions will be published, — the first consisting of three books, to be ready June 20; and the second, of six books, to be ready some time this summer. The introduction presents, in brief but systematic form, the most important facts regarding Homeric life, the Homeric poems, Homeric style, syntax, dialect, and verse. The commentary is adapted to the wants of beginners in Homer. The notes are copious for the first three books. They are less copious for Books IV.–VI., but the commentary on Book VI. is fuller than that on Books IV. and V. The vocabulary is illustrated with more than twenty woodcuts, most of which are new in this country.

— Frederick Warne & Co. have now ready "Fifty Years on the Trail," a true story of Western life, by John Y. Nelson and Harrington O'Reilly, illustrated by Paul Frenzeny, who has also lived among the scenes in which this story of wild frontier life is laid. Nelson was an old-time scout, guide, and interpreter before cities and towns drove out Indians and buffaloes, and with the aid of his collaborator he has made a book of four hundred pages, which appears with appropriate cover-design.

— T. Y. Crowell & Co. publish the following important books, in paper covers, at fifty cents each, this month: "Ivan Ilyitch and Family Happiness" and "My Confession," two contrasting works by Count Lyof N. Tolstoj; and Dr. George Brandes' new book, "Impressions of Russia," which will throw fresh light on a very interesting subject.

— D. C. Heath & Co. will publish in September "A German Reader, for Beginners in School or College," by Edward S. Joynes, editor of the "Joynes-Meissner German Grammar."

— The Cambridge University Press, according to the *London Academy*, has now nearly ready for publication "The Collected Papers of Henry Bradshaw," the late university librarian, and a wonderful scholar.

— Roberts Brothers announce for fall publication "The Life of Louisa M. Alcott," by Ednah D. Cheney, her lifelong friend. Miss Cheney has written her biography of the author of "Little Women" in a manner to interest the youngest readers of that wonderfully successful book, who will eagerly read the story of Miss Alcott's home life, and her efforts to write stories for the boys and girls she loved so dearly. Two portraits will be included in the book.

— The July number of *The Chautauquan* presents as its opening article a study by Gen. H. V. Boynton on "Our National University," the city of Washington. Elizabeth Robins Pennell gives some advice about "Outings for Thin Pocket-Books." The "Sunday Readings" are selected by Bishop Vincent. Professor La-Roy F. Griffin of Lake Forest University furnishes a timely article on "The Art of Keeping Cool." Ida M. Tarbell sketches the life of Madame de Staël. A brief description of "Student Life in Germany" is given by F. M. Warren, Ph.D. Olive Thorne Miller continues her observations of bird-life, this time writing of their "Baby-Days." Professor A. P. Coleman, Ph.D., of Victoria University, relates some thrilling experiences of his while canoeing on the Columbia. "The Foreign Element and Prohibition" is the subject of a thoughtful article by the Hon. Albert Griffin, chairman

of the Anti-Saloon Republican National Committee. Bishop Mal-lalieu tells of his sight-seeing in holy Moscow. John Murdoch describes "Hunting and Fishing at Point Barrow." James K. Reeve suggests perfume flower-farming as "a home industry in which the surplus labor of a household could be profitably employed." "Chautauqua Life in 1800" is a valuable historical article by Francis Newton Thorpe, Ph.D. Ripley Hitchcock gives a delightful account of "Country Club Life," and interesting facts regarding "The Jews in the United States" are given by Philip Cowen.

— A. D. F. Randolph & Co. will publish at once "Unknown Switzerland," by Victor Tissot, translated by Mrs. Wilson.

— The *Contemporary Review* for June (New York, Leonard Scott Publication Company, 29 Park Row) opens with a paper by Archbishop Walsh, entitled "Arbitration or the Battering-Ram?" in which he relates some of the leading incidents that have marked the course of his efforts in the cause of peace. The archbishop is an ardent advocate of the efficacy of arbitration, and he describes the progress made thus far by that method in settling the Irish question. Sir Morell Mackenzie contributes the first of two papers on speech and song, which, in view of the author's connection with the late Emperor Frederick, promise to possess exceptional interest. W. T. Stead, editor of the *Pall Mall Gazette*, contributes an article on "Madame France and her General," in which he treats of the rise, progress, and possible future of Boulanger. France, he argues, is wearied of the republic, and Boulanger is simply a distraction. The republic has committed many grave and glaring faults, especially the policy of colonial extension; the administration has been tainted with corruption; the government is intensely anti-clerical; and stupendous financial crises have happened under it. Frederick Greenwood traces the decline of English influence in continental politics in a paper entitled "The Mysteries of our Foreign Relations." Vernon Lee presents some irrelevant talks on the use of the beautiful, in a paper entitled "Orpheus in Rome." Edwin Hatch argues that the tendency of the present age has been to transfer the basis of theology from metaphysics to history. E. J. Goodman describes that well-known English institution the Savage Club, and tells some interesting stories in connection with it. G. B. Hill presents a somewhat novel view of Dr. Johnson's character in an article on "Dr. Johnson as a Radical." Sir William Dawson contributes a brief note, in which he defends himself on some of his views of Genesis. The number concludes with two papers on "The Volunteers," by C. B. Brackenbury and Lord Mayor Whitehead.

— The *Nineteenth Century* for June (New York, Leonard Scott Publication Company, 29 Park Row) opens with an appeal against woman suffrage, signed by a number of representative English women, including such names as Lady Frederick Cavendish, Lady Randolph Churchill, Mrs. Knox-Little, Mrs. Humphry Ward, Mrs. Huxley, Mrs. Lynn Linton, Mrs. Alma Tadema, Mrs. Matthew Arnold, and Mrs. Max Müller. Professor Edward Dicey presents a short but strong article on the "Ethics of Political Lying." Mlle. Blaze de Bury contributes the first of two papers on the "Theatre Français and its Sociétaires," in which she traces the continuity of common interests which has kept this body together for two centuries, and explains Molière's ideas in creating it. In an article on "A Bird's-Eye View of India," Lady Grant Duff argues that India is a continent, not a people, and that its real characteristics are practically unknown in England. Lady Verney writes on "Six Generations of Czars," summarizing the personal history of the czars for the last two hundred years, and deducing therefrom the personal traits of the present ruler. Prince Krapotkin writes on the "Great French Revolution," which he regards as a necessity and the greatest moving force in modern history. He argues that the condition of the Russian peasantry to-day, compared with that of the French, is sufficient proof of the benefits wrought by the revolution. Mrs. Priestly writes on the "Mysteries of Malaria," reviewing the recent progress made in analyzing the disease. Edward Clifford, whose paper on "Father Damien and the Lepers" last month attracted so much attention, contributes an article on the "Hawaiians and Father Damien." Samuel Plimsoll presents some interesting facts on marine insurance, in an article which is a continuance of papers on the same subject in the March and April

numbers of the *Review*. The Rev. H. P. Dunster argues for an extension of the postal service, in a paper entitled "An Agricultural Parcels Post," in which he maintains that the post-office should give facilities for the distribution of food. E. N. Buxton contributes an eminently readable article on "Sardinia and its Wild Sheep," descriptive of a hunt in the wilds of Sardinia. Lord Ebrington describes a "By-Election in 1747," giving the full details of the expenses of parliamentary methods more than one hundred years ago, and throwing much light on early politics. The number concludes with a long essay by Professor Huxley on "Agnosticism and Christianity," written in his most characteristic vein, which forms an important contribution to the already extensive list of papers on this subject published in this *Review*.

—Messrs. Longmans, Green, & Co. send us the first number of the *New Review*, a magazine of ninety-six pages, which is sold for the low price of fifteen cents. The prospectus lays great stress on the eminence of the contributors that have been engaged, and conveys possibly the impression that the writer's name will be considered of more account than the quality of his work. However, the articles in this first issue are on the same level as those of its larger rivals, though some of them are too brief for a proper presentment of the subject treated. The opening paper, on "Gen. Boulanger," is the best, and will of course attract the most attention. It is in two parts. The first, written with the general's own authority and presenting his side of the case, is by Alfred Naquet of the French Senate; the second, presenting the opposite side, by Camille Pelletan of the French Chamber. It appears that the general's followers are animated by dislike of parliamentary government, and, though professing to be republicans, they really want a sort of dictatorship tempered by the *plébiscite*. French parliamentarism has not been so successful as might be wished, owing to the fact that the ministry are not at liberty to dissolve the Chamber and appeal to the people; but to seek a remedy, as M. Naquet would do, in the virtual abolition of parliamentary government, seems very unwise. M. Pelletan thinks the rise of Boulangerism an almost unaccountable phenomenon, but attributes it partly to the discontent which various classes feel towards the present government, and partly to the passion of the French people for a hero. It is plain, from the tone of the two articles, that the general's partisans are more hopeful than his opponents; and the outcome of the struggle will be looked for with much interest. The second paper in the *Review* is a rambling dialogue, "After the Play," by Henry James, designed as a critique of the contemporary drama. Earl Compton writes of "The Homes of the People," presenting anew the evils of the tenement-house system in cities, and advocating the erection of new and improved dwellings by the cities themselves. Lord Charles Beresford writes on "National Muscle;" Mrs. Lynn Linton, on "The Religion of Self-Respect;" and Mr. G. W. Russell, on "The Unionist Policy for Ireland." Mr. Russell's paper, though brief, is very suggestive, advocating measures for assisting the Irish tenants to purchase their holdings, and also a system of local government for Ireland similar to that already established in England. The concluding article is by Lady Randolph Churchill, detailing her observations during a month in Russia. It is written in a clear and simple style, and shows great keenness of observation, and will be sure to interest those who like to read about social life and customs. On the whole, the *New Review*, notwithstanding the brevity of some of its articles, promises to be a formidable rival of the older English reviews, as well as of some published in the United States.

—European scholars are devoting much attention at present to the centenary of the French Revolution and its influence upon European politics. The *Fortnightly Review* for June (New York, Leonard Scott Publication Company, 29 Park Row) opens with two papers on the Revolution, — the first, "What the French Revolution did," by Frederic Harrison, a brilliant and scholarly paper; and the second, by Gen. Viscount Wolseley, entitled "The French Revolution and War," in which he investigates the influence which that event exerted upon the science of warfare. The Marquis of Lorne presents a review of "Five Years' Advocacy of Provincial Parliaments," which he suggested some time since as a solution of the Irish difficulty; William Day, in a paper on "Turf Reform,"

argues for the necessity of devising fresh regulations, and instituting more stringent measures for purifying the turf and benefiting the whole racing community; E. C. K. Gonner writes on "The Foreigner in England," and maintains that there are many serious grievances arising from unrestricted immigration to England, calling for immediate action on the part of the authorities; Professor E. A. Freeman contributes a note on "The House of Hapsburg in South-eastern Europe," in which he questions some statements made by Mr. J. D. Bouchier in a paper on the same subject in the March number of the *Review*; Lady Dilke describes some benefit societies and trades unions for women, — a subject of much importance to all laboring women; Dr. Robson Roose presents some good and careful rules on the "Art of Preserving Life;" an anonymous writer criticises some recent changes made by the British Government in the matter of the Egyptian bonds; and Frederick Greenwood contributes an interesting sketch entitled "A Conversation in a Balcony." The number concludes with an eminently readable paper on "The Women of Spain," by Emilia Pardo Bazan.

LETTERS TO THE EDITOR.

*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The editor will be glad to publish any queries consonant with the character of the journal.

Cloud and Fog.

THE formation of cloud has been generally ascribed to the rising of a mass of saturated air to a cooler stratum, where the cooling due to expansion and that from the surrounding air produces a supersaturation and visible cloud. Not long since, Mr. John Aitken of Scotland propounded the rather startling theory that cloud could not be formed without the intervention of solid particles of dust, smoke, or other substance. This view was based on laboratory experiments, in which dust-free air seemed to show no condensation upon rarefaction. It would seem as though this view can hardly be possible. If two molecules of vapor have been sufficiently cooled, why may they not coalesce into a double molecule of water? If we consider that each double molecule of water needs a solid particle for a nucleus, there will be needed enormous quantities of these particles in each cloud, and more, it would seem, than can possibly be present in the cloud-forming strata.

A few experiments have been tried in cloud-formation, and a brief review of these is given here, the complete discussion and experimental proofs being reserved for another occasion. Most of the experiments were made with a clear glass water-bottle holding a half-gallon, and having three openings at the top. These were fitted with absolutely tight rubber stoppers having openings, which allowed the use of wet and dry thermometers to determine the moisture, and the use of glass tubes whereby the air could be compressed or exhausted at pleasure. An attempt was made to saturate the air by first passing it through a bottle of water; but, this not succeeding, it was passed through a bottle full of cracked pumice and water, a U-tube of the same, another U-tube having cotton soaked in water, and a straight tube with four inches of cotton (also wet). Near the compressor was a tube having three inches of dry cotton, and in the tube passing into the bottle there was another pledget of cotton. It was still found, after passing through this mass of moisture, that the air was not saturated, and it seems a practical impossibility to perfectly saturate air. Even after heating the bottle and tube of pumice nearly to boiling, the air was not saturated. It would seem as though this might explain in part the non-success of some former experiments in producing cloud in dust-free air.

Experiment 1. — Air was introduced into the bottle, as near saturated as possible, and then the whole was heated to 110°. The dry bulb rose a little faster than the wet. On suddenly cooling the outside, no cloud was observed, nor did the thermometers come together, but moisture was deposited on the sides.

Experiment 2. — The air was again heated to 110°, and it was mingled with nearly saturated air at about 65°. No cloud was observed.

Experiment 3. — The air was again heated, and a small piece of ice was suspended near the top. No cloud was observed, but a